

ADDENDUM #1
December 31, 2020

PROJECT: **USDA Sewer System Improvements – Contract B – Town Branch Interceptor**

OWNER: City of Thomaston

BID DATE: Original Bid Date – Friday, January 8, 2021 at 2:30 P.M.
Revised Bid Date (Per Addendum #1) – Friday, January 15, 2021 at 1:30 P.M.

Please be advised the following has changed:

1. CLARIFICATIONS & MISCELLANEOUS INFORMATION

- a. **The date of the bid has been changed to Friday, January 15, 2021 at 1:30 P.M.**
- b. A non-mandatory pre-bid meeting has been scheduled for Thursday, January 7, 2021 at 1:00 pm. The meeting will take place at the City Manager's located at 106 East Lee Street Thomaston, GA 30286.
- c. Existing power poles in conflict with the proposed work will be relocated by the City electric department prior to construction of the sanitary sewer main. Payment for this work will be through the Power Pole Relocation Allowance and is subject to its requirements.
- d. For purposes of bypass pumping, the contractor shall expect typical daily flows of 1 MGD and peak flows of 4 MGD following significant rainfall events.
- e. The contractor is responsible for clearing of the existing easement as necessary to access and install the proposed improvements. Payment for this item shall be included in the item for Remove, Haul, and Dispose of Ex. Sewer Main & Manholes included in the Bid Form.
- f. Testing
 - i. A lump sum item for Testing Services has been added to the Bid Form. Payment for this item shall include all testing services required by Section 01410. Additional testing requested by Owner or Engineer shall be paid for via the Supplemental Work Allowance.
 - ii. Deflection testing (by mandrel) is required for the entire alignment.
- g. Erosion Control

- i. Silt fence "type sensitive" shall be installed on the downstream edge of all slopes within the existing easement (approximately 11,000 LF).
- ii. Double-row silt fence shall be required in areas where the stream buffer is disturbed (approximately 800 LF). See the erosion control plans for stream buffer disturbance locations.
- h. Per the Plans, *"Existing pipe is 18" clay and shall be removed and disposed of properly or may be "demolished in place" by removing pipe pieces larger than 6" in diameter. For "demolish in place", clay pipe pieces smaller than 6" in diameter may be mixed in with specified backfill material. Existing pipe at creek crossing is ductile iron and shall be removed and disposed of by contractor. Existing manholes shall be removed and disposed of by contractor."* The existing clay pipe may be crushed into pieces smaller than 6" in order to be mixed in with specified backfill materials.

2. CONSTRUCTION PLANS, SHEET C2.1

- a. Ductile Iron Pipe will be required from Sta. 22+25 to Sta. 25+75. The associated quantities in the Bid Form have been updated to reflect this change (see attached).

3. CONSTRUCTION PLANS, SHEET C2.7

- a. The proposed pipe elevations from SSMH-5 to SSMH-0 have been modified (see revised sheet). Bid Items in the base bid and alternate bid for Sanitary Sewer Complete (various depths) and Precast Manhole have been adjusted accordingly (see revised Bid Form).
- b. The connectivity of the existing pipes in the vicinity of EX-SSMH-0 near the upstream end of the alignment near Hwy 36 has been modified (see revised sheet).

4. CONSTRUCTION PLANS, SHEET C4.0

- a. Rim elevations for proposed manholes shall be 2' above existing grade unless otherwise noted in the plans. See updated detail in the attached revised plan sheet.
- b. The bedding and backfill detail has been revised (see attached).

5. CONTRACT DOCUMENTS, SECTION C200

- a. Qualifications of contractor to complete work shall be submitted in accordance with Article 3 – 3.01. Bidder shall disregard Article 3 – 3.03.

6. CONTRACT DOCUMENTS, SECTION C520

- a. The contract time shall be 250 days.

7. CONTRACT DOCUMENTS, SECTION C700

- a. The contractor shall be required to pay sales tax on all materials and equipment for this project and will not be required to claim the Owner's tax exempt status to avoid said costs.
- b. The Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - i. the quantity of the item of Unit Price Work performed by Contractor differs ~~materially and significantly~~ by 10% or greater from the estimated quantity of such item indicated in the Agreement; and
 - ii. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

8. TECHNICAL SPECIFICATIONS, SECTION 02315

- a. Specifications for pipe bedding have been revised (see attached).

9. TECHNICAL SPECIFICATIONS, SECTION 02316

- a. The section footer was previously mislabeled as "00410". The correct notation is "02316".

10. TECHNICAL SPECIFICATIONS, SECTION 02373

- a. This specification for NPDES monitoring has been added to the Technical Specifications (see attached). Payment for NPDES Permitting and Monitoring shall be included in Bid Item #27 – "Erosion and Sediment Control Complete - Silt Fencing, Rock Check Dams, Construction Entrance/Exit, Temporary & Permanent Seeding/Grassing, and NPDES Permitting and Monitoring".

11. TECHNICAL SPECIFICATIONS, SECTION 02530

- a. HDPE and polypropylene pipes have been removed as acceptable pipe materials and will not be allowed for this project. PVC and ductile iron will be the only

accepted pipe materials. Except where DIP is explicitly called for in the plans (see Bid Items #5-6, ALT-5, and ALT-6,) the contractor may choose between PVC and DIP at his/her preference (Bid Items #7-15 and #ALT-7 through ALT-15). The selected pipe must conform to the requirements of Section 02530.

- b. PVC shall be supplied in maximum pipe lengths of 14'.

All bidders shall acknowledge receipt of all addenda issued where indicated on the bid sheets. (SECTION 00410 – Bid Form, Page 2)

ATTENTION

ALL BIDDERS SHALL SIGN IN THE SPACE PROVIDED ON THE ENCLOSED REVISED BID SHEET(S) TO INDICATE RECEIPT OF THIS ADDENDUM.

BIDDERS ARE ADVISED THAT IT IS THEIR RESPONSIBILITY TO VERIFY THAT ANY AND ALL ADDENDA HAVE BEEN RECEIVED PROPR TO SUBMISSION OF THE BID. IN CASE ANY BIDDER FAILS TO ACKNOWLEDGE RECEIPT OF ANY SUCH ADDENDA IN THE SPACE PROVIDED ON THE BID FORM, THE BID WILL NEVERTHELESS BE CONSTURED AS THOUGH THE BIDDER HAS RECEIVED AND ACKNOWLEDGED ALL SUCH ADDENDA, AND THE SUBMISSION OF THE BID WILL CONSTITUTE ACKNOWLEDGEMENT AND RECEIPT OF SAME.

END ADDENDUM

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

City of Thomaston

106 E Lee Street

Thomaston, GA 30286

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- F. Required Bidder Qualification Statement with supporting data; ~~and~~
- ~~G. [List other documents and edit above as pertinent].~~
- G. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);
- H. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- I. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.
- ~~J. [List other documents and edit above as pertinent].~~

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump-Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:

1. ~~Lump Sum Price (Single Lump Sum)~~

Lump Sum Bid Price	\$
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2. ~~Lump Sum Price (Base Bid and Alternates)~~

Lump Sum Bid Price for Base Bid	\$
Alternate A [Add] [Deduct]	\$
Alternate B [Add] [Deduct]	\$

3. ~~Lump Sum Price (Sectional Lump Sum Bids)~~

Lump Sum Bid Price for Section I only	\$
Lump Sum Bid Price for Section II only	\$
Lump Sum Bid Price for Section I and II	\$

B. ~~All specified cash allowance(s) are included in the price(s) set forth below, and have been computed in accordance with Paragraph 13.02 of the General Conditions.~~

Lump Sum for Cash Allowance 1	\$
Lump Sum for Cash Allowance 2	\$
Lump Sum for Cash Allowance 3	\$
Total for all Lump Sum for Cash Allowances	\$

C. ~~All specified contingency allowances are included in the price(s) set forth below, and have been computed in accordance with Paragraph 13.02 of the General Conditions.~~

Lump Sum Contingency Allowance 1	\$
Lump Sum Contingency Allowance 2	\$
Lump Sum Contingency Allowance 3	\$
Total for all Lump Sum Contingency Allowances	\$

BID FORM STARTS ON NEXT PAGE

3.02 Unit Price Bids- **BASE BID**

A. Bidder will perform the following Work at the indicated unit prices:

BASE BID					
Item No	Description	QTY	Unit	Unit Price	Total Price
1	Rock Removal - Base Cost	1,500	CY	\$ 60.00	\$ 90,000.00
2	Rock Removal - Premium Cost	1,500	CY		
3	Remove, Haul, and Dispose of Ex. Sewer Main & Manholes	1	LS		
4	Bypass Pumping	1	LS		
5	30" Sanitary Sewer Main (Ductile Iron Required Per Plans) (0-6' Cut)	1470	LF		
6	30" Sanitary Sewer Main (Ductile Iron Required Per Plans) (6-8' Cut)	170	LF		
7	30" Sanitary Sewer Main Complete (0-6' Cut)	2050	LF		
8	30" Sanitary Sewer Main Complete (6-8' Cut)	3120	LF		
9	30" Sanitary Sewer Main Complete (8-10' Cut)	2170	LF		
10	30" Sanitary Sewer Main Complete (10-12' Cut)	1840	LF		
11	30" Sanitary Sewer Main Complete (12-14' Cut)	590	LF		
12	30" Sanitary Sewer Main Complete (14-16' Cut)	280	LF		
13	30" Sanitary Sewer Main Complete (16-18' Cut)	180	LF		
14	30" Sanitary Sewer Main Complete (18-20' Cut)	40	LF		
15	30" Sanitary Sewer Main Complete (20-25' Cut)	150	LF		
16	Precast 5' Dia. Manhole	460	VF		

17	Precast 6' Dia. Manhole	45	VF		
18	Manhole Ring & Cover	46	EA		
19	Reconnect Existing 8" Sewer Main to New Manhole with Link-Seal or Approved Equal	3	EA		
20	Reconnect Existing 20" WWTF Process Piping to New Manhole with Link-Seal or Approved Equal	2	EA		
21	Reconnect Existing 24" Sewer Main to New Manhole with Link-Seal or Approved Equal	1	EA		
22	Reconnect Existing Service Lateral to New Main	17	EA		
23	2" 9.5mm Asphalt Surface Course	8	TN		
24	3.5" 19mm Asphalt Binder Course	15	TN		
25	8" Graded Aggregate Base Course	75	SY		
26	Remove and Replace Existing Fence as Necessary at WWTF	1	LS		
27	Erosion and Sediment Control Complete - Silt Fencing, Rock Check Dams, Construction Entrance/Exit, Temporary & Permanent Seeding/Grassing, and NPDES Permitting and Monitoring	1	LS		
28	Mobilization/Demobilization	1	LS		
29	Traffic Control	1	LS		
30	Testing Services	1	LS		
31	Power Pole Relocation	1	LS	\$ 20,000.00	\$ 20,000.00
32	Supplemental Work Allowance	1	LS	\$ 85,000.00	\$ 85,000.00
TOTAL BASE BID AMOUNT					

Bidder agrees to furnish all labor, materials, and equipment necessary to construct USDA Sewer System Improvements – Contract B – Town Branch Interceptor for the City of Thomaston for the TOTAL BASE BID sum of

_____ Dollars (\$ _____)

3.03 Deductive Alternate Bid

- A. Bidder will provide the following alternate bid items for consideration by the Owner for award. The alternate bid items reduce the proposed pipeline diameter from 30" to 24" (and associated items) and will be considered comprehensively as an option to reduce price due to budgetary constraints. The Bidder shall complete the below unit price bid form for the total cost of the work under each item description. Total reduction in cost due to alternate items will be tabulated and considered post bid opening.
- B. The Owner, at their option, will select the low bidder based on the TOTAL BASE BID or the altered TOTAL BASE BID based on utilization of the below ALT Bid Items to replace the corresponding bid items in the BASE BID should the 24" Pipe be selected due to budget constraints. All Alternate Bid Items will be utilized or none based on budget adjustment/scope only.

ALTERNATE BID ITEMS					
Item No	Description	QTY	Unit	Unit Price	Total Price
ALT-5	24" Sanitary Sewer Main (Ductile Iron Required Per Plans) (0-6' Cut)	1470	LF		
ALT-6	24" Sanitary Sewer Main (Ductile Iron Required Per Plans) (6-8' Cut)	170	LF		
ALT-7	24" Sanitary Sewer Main Complete (0-6' Cut)	2050	LF		
ALT-8	24" Sanitary Sewer Main Complete (6-8' Cut)	3120	LF		
ALT-9	24" Sanitary Sewer Main Complete (8-10' Cut)	2170	LF		
ALT-10	24" Sanitary Sewer Main Complete (10-12' Cut)	1840	LF		
ALT-11	24" Sanitary Sewer Main Complete (12-14' Cut)	590	LF		
ALT-12	24" Sanitary Sewer Main Complete (14-16' Cut)	280	LF		
ALT -13	24" Sanitary Sewer Main Complete (16-18' Cut)	180	LF		
ALT -14	24" Sanitary Sewer Main Complete (18-20' Cut)	40	LF		
ALT-15	24" Sanitary Sewer Main Complete (20-25' Cut)	150	LF		
ALT-16	Precast 4' Dia. Manhole	460	VF		

ALT – 17	Precast 5' Dia. Manhole	45	VF		
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C. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

3.04 *Total Bid Price (Lump Sum and Unit Prices)*

Total Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
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ARTICLE 4—BASIS OF BID—COST PLUS FEE

4.01 The Contract Price will be the Cost of the Work, determined as provided in Paragraph 13.01 of the General Conditions, together with the following fee, and subject to the Guaranteed Maximum Price.

4.02 *Contractor's Fee*

A. Contractor's fee will be **[number]** percent of the Cost of the Work. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions.

1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed ~~\$(insert cap amount)~~, subject to increases or decreases for changes in the Work.

B. Contractor's fee will be determined by applying the following percentages to the various portions of the Cost of the Work as defined in Article 13 of the General Conditions. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions:

Costs	Percent
Payroll costs (See Paragraph 13.01.B.1, General Conditions)	
Materials and Installed Equipment cost (GC 13.01.B.2)	
Amounts to be paid to Subcontractors (GC 13.01.B.3)	
Amount to be paid to special consultants (GC 13.01.B.4)	
Other costs (GC 13.01.B.5)	

1. The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed ~~\$(insert cap amount)~~, subject to increases or decreases for changes in the Work.

C. Contractor's fee will be the fixed sum of ~~\$(number)~~.

4.03 *Guaranteed Maximum Price*

A. The Guaranteed Maximum Price to Owner of the Cost of the Work including Contractor's Fee will not exceed ~~\$(Bidder fill in GMP)~~.

Deleted

ARTICLE 5—PRICE PLUS TIME BID

5.01 *Price-Plus-Time Contract Award (Stipulated Price Contract)*

A. ~~The Bidder to which an award of the Contract will be made will be determined in part on the basis of the Total Bid Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Total Bid Price		\${number}
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	\${number}/day	
B	4. Adjustment Amount (2 x 3)		\${number}
A+B	5. Amount for Comparison of Bids		\${number}

B. ~~The purpose of the process in the table above is only to calculate the lowest price-plus-time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is the Total Bid Price.~~

C. ~~Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

5.02 *Price-Plus-Time Contract Award (Cost-Plus-Fee with Guaranteed Maximum Price Contract)*

A. ~~The Bidder to which an award of Contract will be made will be determined in part on the basis of the Guaranteed Maximum Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Guaranteed Maximum Price		\${number}
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	\${number}/day	
B	4. Adjustment Amount (2 x 3)		\${number}
A+B	5. Amount for Comparison of Bids		\${number}

B. ~~The purpose of the process in the table above is only to calculate the lowest price-plus-time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is based on the cost of the Work, plus a fee, subject to a guaranteed maximum price, as set forth in the Agreement.~~

C. ~~Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

Deleted

ARTICLE 6—TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder agrees that the Work will be substantially complete on or before ~~[Bidder inserts date]~~, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before ~~[Bidder inserts date]~~.

Deleted

6.03 Bidder agrees that the Work will be substantially complete within ~~[Bidder inserts number]~~ calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within ~~[Bidder inserts number]~~ calendar days after the date when the Contract Times commence to run.

Deleted

6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder’s Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, **including all American Iron and Steel requirements.**
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the

Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at

artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

- c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

SECTION 02315
EXCAVATION, TRENCHING AND BACKFILL FOR UTILITY SYSTEMS

PART 1 – GENERAL

1.01 SCOPE

- A. Furnish all labor, materials, equipment and incidentals necessary to perform all excavation, trenching and back fill required to complete the work shown on the Drawings and specified herein. The work shall include, but is not limited to; excavation for manholes, vaults, electrical manholes, hand holes, conduits, cables, raceways and ducts and pipes; all backfilling, embankment and grading; disposal of waste and surplus materials; and all related work such as sheeting, bracing and dewatering.
- B. Obtain materials required for backfill, fill, or embankments in excess of that available on the site from other sources. Include all costs of obtaining off-site materials in the contract price.

1.02 RELATED WORK

N/A

1.03 REFERENCES

- A. American Society for Testing and Materials.

1.04 TESTING SERVICES

- A. General: The Contractor shall select a qualified independent testing laboratory for the purpose of identifying soils, checking densities, and classifying soils materials during construction. All testing will be paid for by the Contractor. **Copies of all test results shall be furnished to the Engineer.**
- B. All materials to be used in the work shall be tested prior to the use to show conformance with the requirements of these specifications. Materials being used in the work, which have been tested previously, may be subjected to further tests from time to time and may be rejected if found defective. Rejected materials shall be removed from the project immediately, notwithstanding the results of former tests to which they have been subjected.
- C. Moisture-Density Tests: Testing shall be in accordance with ASTM Methods D698

**SECTION 02373
NPDES STORM WATER PERMITTING**

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

General Permit No. GAR100002 – Georgia Department of Natural Resources
Environmental Protection Division

Manual for Erosion and Sediment Control in Georgia – State Soil and Water
Conservation Commission

1.02 RELATED WORK

A. Section 02370 – Soil Erosion Control

1.03 SCOPE OF WORK

Comply with requirements of State of Georgia Department of Natural Resources
Environmental Protection Division General Permit No. GAR100002. Permit governs
storm water discharges associated with construction activity specifically construction
projects under the National Pollutant Discharge Elimination System.

1.04 SUBMITTALS

Contractor shall submit a copy of the Notice of Intent (N.O.I.) to the local EPD’s District
Office and the local Soil and Water Conservation Service/EPD Water Protection Branch
(depends on local permitting authority) in accordance with the permit on behalf of Owner
a minimum of 14 days prior to the start of construction activities.

Contractor shall assume responsibilities and requirements of Primary Permittee once
awarded the contract.

1.05 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Contractor shall obtain required permits and licenses in accordance with
requirements of Federal Clean Water Act (CWA) and Water Quality Act
(WQA). Contractor shall file Notice of Intent (NOI) with Georgia
Environmental Protection Division. General Contractor shall be
Operator/Primary Permittee on Notice of Intent. Contact GA. EPD at 404-
362-2671 for additional information and permit forms.

2. Contractor shall provide temporary and permanent erosion control systems as indicated on Drawings and as necessary to protect adjacent properties and water resources from erosion and sedimentation.
3. CWA (1972) and WQA (1987) Requirements:
 - a. Where Work on this project will disturb 1 or more acres, do not start Work without obtaining a “National Pollution Discharge Elimination System” (NPDES) permit governing discharge of storm water from project site for duration of Contract. Obtain approved Erosion, Sedimentation, and Pollution Control (ES&PC) Plan from Owner/Engineer prior to construction.
 - b. Provide storm water management in accordance with NPDES permit and for any enforcement action taken or imposed by Federal or State agencies, including cost of fines, construction delays and remedial actions resulting from failure to comply with all provisions of NPDES permit and SWP3.
 - c. Keep NOI and ES&PC Plan on site and make available for inspection by appropriate authority having jurisdiction at any time.

PART 2 – RESPONSIBILITIES OF THE PRIMARY PERMITTEE (GENERAL CONTRACTOR):

2.01 GENERAL

The following information generally summarizes certain requirements of the General Permit No. GAR100002. This information is not intended to represent the complete requirements to comply with the Permit for this project. The General Contractor shall assume the responsibilities and requirements of the Primary Permittee and Operator for the project.

2.02 NOTICE OF INTENT (NOI)

Contractor shall submit the Notice of Intent (NOI) and any necessary supporting documentation to Georgia Environmental Protection Division (EPD) 14 days prior to the start of construction activities. General Contractor shall be the Operator/Primary Permittee on Notice of Intent.

2.03 EROSION, SEDIMENTATION, AND POLLUTION CONTROL (ES & PC) PLAN

The ES & PC Plan shall be amended if a significant change in the design, construction, operation, or maintenance of the Best Management Practices (BMPs) is needed. The Primary Permittee shall be responsible for amending the plan and shall have it certified by a licensed professional. The certification and any necessary supporting documentation shall be sent to EPD.

2.04 SAMPLING

- A. The Primary Permittee shall sample in accordance with the following rainfall events:
 - 1. The first rainfall event greater than or equal to 0.5-in. and allows for monitoring during normal business hours that occurs after all clearing and grubbing operations are complete in the drainage area of the location selected as the representative sampling location.
 - 2. First rain event greater than or equal to 0.5 in. that follows either 90 days after initial sampling event or after mass grading is complete in said area.
- B. If BMPs have not been properly designed, installed, or maintained, corrective action shall be defined and implemented within 2 days and samples shall be taken for each subsequent rain event greater than or equal to 0.5 in. during normal business hours until selected turbidity is attained or until post-storm event inspections determine that BMP's are properly designed, installed, and maintained.
- C. One representative outfall sampling location shall be selected by the Engineer prior to beginning construction. The Contractor is responsible for contacting Engineer to determine the location for the representative outfall sample.

2.05 ANALYSIS

- A. Samples collected manually shall be collected within 45 minutes following the rain event.
- B. Samples should be analyzed immediately as required by the permit, but shall be analyzed no later than 48 hours after collection.
- C. All samples that have been analyzed shall be documented.

2.06 SITE INSPECTIONS BY LICENSED PROFESSIONAL (ENGINEER OF RECORD)

- A. Within one week after initial construction begins, the licensed professional (Engineer of Record) who prepared the ES&PC Plan shall inspect the execution of the ES & CP Plan and determine if BMP's have been installed and maintained as designed. The Primary Permittee shall notify the licensed professional that the Plan has been implemented and his/her inspection is required.
- B. The Primary Permittee shall correct any deficiencies identified by the licensed professional within two business days of inspection.

2.07 SITE INSPECTIONS BY PRIMARY PERMITTEE

- A. Qualified personnel, individuals who have successfully completed an approved E&SC short course approved by EPD, shall perform all site inspections.
- B. Site inspections shall be conducted in accordance with the following schedule:
 - 1. Each day when any type of construction activity has taken place, qualified personnel shall inspect (a) all areas where petroleum products are stored, used or handled and (b) all locations where vehicles enter or exit the site; and (c) measure rainfall once each twenty-four hour period at the site.
 - 2. A site inspection shall be conducted at least every fourteen (14) calendar days and within 24 hours of the end of any rainfall event that is greater than or equal to 0.5-in.
 - 3. Qualified personnel shall inspect at least once per month (until NOT is received by EPD) the areas of the site that have undergone final stabilization.
 - 4. A report summarizing each inspection should be kept on site for documentation.
- C. Any deficiencies identified during the inspection of BMPs shall be corrected within seven (7) days of the inspection.
- D. Amendments to the ES & PC Plan resulting from inadequate BMP design shall be developed and resubmitted (ES & PC Plan to EPD) by a certified professional hired by the Contractor.
- E. Any additional erosion and sedimentation control measures necessary during construction to prevent silt and sediment from leaving the site shall be the responsibility of the Contractor.

2.08 PERMIT VIOLATIONS AND PENALTIES

- A. Permit violations are grounds for an enforcement action, permit termination (stop work order), or denial of a permit renewal application.
- B. Failure to properly design, install or maintain BMPs shall constitute a violation of the Permit for each day on which such a failure occurs.
- C. If BMPs are not properly designed, installed and maintained, the following will result in a second violation of the Permit:
 - 1. If monitoring receiving waters: an increase in the turbidity of downstream waters by 10 Nephelometric Turbidity Units (NTUs) for waters classified as trout streams or 25 NTUs for waters supporting warm water fisheries; or
 - 2. If monitoring outfalls: turbidity measurements that exceed the value set forth by the NTU Tables presented in Appendix B of Permit No. GAR100002.
- D. A fine or imprisonment or both shall, upon conviction, punish any person who falsifies, tampers with or knowingly renders inaccurate monitoring information, any record, or document.
- E. The Primary Permittee is not excused from compliance with the Permit even if a local government authority has approved the ES&PC Plan or failed to take enforcement action.

2.09 RECORD KEEPING AND REPORTING REQUIREMENTS

- A. The Primary Permittee shall submit to EPD by the 15th of each month, a summary of storm water discharge monitoring (turbidity) results. A summary of all known violations of the Permit at the site shall be included.
- B. The following records are required by the Permit and shall be retained by the Primary Permittee at the construction site or a readily available designated alternate location:
 - 1. Copy of NOI and delivery receipt
 - 2. Copy of ES&PC (Erosion, Sedimentation, and Pollution Control (ES &PC) Plan
 - 3. Inspection report from the licensed professional that prepared the ES&PC Plan stating that BMPs have been installed as designed
 - 4. Daily rainfall log

5. Daily inspection logs of entrances and exits (when construction activity has taken place)
 6. Bi-weekly inspection logs of all disturbed areas indicating whether or not BMPs identified in the ES&PC Plan are operating correctly. The Primary Permittee shall document any and all known violations.
 7. Sampling records including date, place, and time of sampling and analyses, quality assurance program and turbidity readings.
 8. Inspection results of all areas that have undergone final stabilization
- C. For at least three years, copies of all records must be maintained at the Primary Permittee's place of business.
- D. Upon request, the Primary Permittee shall make the ES&PC Plan, CMP and/or records available to EPD or the local government within three days.

2.10 NOTICE OF TERMINATION (NOT)

- A. The Primary Permittee may submit a Notice of Termination (NOT) and any necessary supporting documentation to EPD when the site undergone final stabilization and all storm water discharges associated with construction have ceased.
- B. A NOT shall be filed if the Owner or Operator of the site changes. The Primary Permittee shall notify subsequent owners of the requirements of the Permit.

END SECTION

and D1557. A test shall be performed on each type of material used in the work regardless of source. Tests will be accompanied by particle-size analyses of the soils tested (ASTM Methods D421 and D422). Changes in color, gradation, plasticity or source of fill material will require the performance of additional tests. Copies of all test results shall be furnished to the Engineer.

D. Field Density Tests: Tests shall be made in accordance with ASTM Method D1556. Tests shall be made in accordance with the following minimum schedule or as required by the soils technician or as may be directed by the Engineer:

1. In proposed street and road right-of-way, parking areas, yards, & other traveled areas, one test per 100 linear feet of trench for each 4' of depth.
2. Under buildings and structures, each lift of backfill shall be tested from undercut level up to slab support level for each 50 linear feet of trench.
3. In unpaved areas, woodland, fields, pastures, areas not open to vehicular traffic, & areas where no structures are proposed, one test per 500 linear feet of trench for each 4' of depth.

E. Submittals

1. The soils technicians will submit formal reports of all compaction tests and retests. The reports are to be furnished to the Owner and the Engineer as soon as possible upon completion of the required tests.
2. This report information is to include but not be limited to the following:
 - a. Date of the test and date submitted.
 - b. Location of test.
 - c. Wet weight, moisture content and dry weight of field sample.
 - d. Description of soil.
 - e. Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.
 - f. Ratio of field dry density to maximum lab dry density expressed as a percentage.
 - g. Comments concerning the field density passing or failing the specified compaction.
 - h. Comments about recompaction if required.

F. Compaction Results

1. If any compaction tests reveal that fill or backfill is not compacted as

specified, the Contractor shall scarify and recompact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests, required due to failure of the original test shall be paid for by the Contractor without reimbursement by the Owner.

2. The soils technician is to advise the Engineer and the Contractor's Superintendent immediately of any compaction tests failing to meet the specified minimum requirements. No additional lift is to be placed on a lift with any portion failing.

1.05 PROTECTION

A. Sheeting and Bracing

1. Furnish, put in place, and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the ridge of the excavation below that necessary for proper construction, and to protect adjacent structures from undermining or other damage. If the Engineer is of the opinion that at any points sufficient or proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the Owner. Sheeting and Bracing requirements are further defined in OSHA Standards, Subpart P, Part 1926 of the Code of Federal Regulations.
2. The Contractor shall construct the sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems it desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressures to which the trench will be subjected. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.
3. Where sheeting and bracing is required to support the sides of excavations, the Contractor shall engage a Professional Engineer, registered in the State of Georgia, to design the sheeting and bracing. The sheeting and bracing installed shall be in conformity with the design, and certification of this shall be provided by the Professional Engineer.

4. The Contractor shall leave in place to be embedded in the backfill all sheeting and bracing not shown on the Drawings but which the Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Engineer may direct that timber used for sheeting and bracing be cut off at any specified elevation. The contractor will be paid for such sheeting directed by the Engineer to be left in place in accordance with the General Conditions. All timber sheeting to be left in place shall be treated.
5. All sheeting and bracing not left in place shall be carefully removed in such manner as not to disturb utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as acceptable to Engineer and Owner.
6. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
7. No sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any sheeting be cut off at a level lower than 1 ft above the top of any pipe. The cost of said sheeting shall be part of the base bid.

B. Dewatering and Drainage

1. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. The Contractor shall engage a Geotechnical Engineer, Registered in the State of Georgia where required, to design the dewatering system. The Contractor shall submit to the Engineer for review the design of the dewatering systems prior to commencing work.
2. The Contractor shall furnish, install, maintain, operate and remove a temporary dewatering system consisting of trenches, sump pits, deep wells, well points, or other methods as required to lower and control the

groundwater level so that the pipes may be installed in the dry. The Contractor shall assume full responsibility for the design and installation of an adequate dewatering system. The Contractor shall, at his own expense, correct all damage resulting from inadequacy of the dewatering system or from flooding of the construction site from other causes.

3. The Contractor shall maintain the water level below the excavated area for the various phases of the work continuously and shall make such provisions as may be necessary to avoid interruptions due to weather, labor strikes, power failures, or other delays. He shall provide and have ready for immediate use at all times diesel or gasoline powered standby pumping units to serve the system in case of failure of the normal pumping units.
4. Piping and boiling, or any form of uncontrolled seepage, in the bottom or sides of the excavation shall be prevented at all times. If for any reason the dewatering system is found to be inadequate to meet the requirements set forth herein, the Contractor shall at his own expense make such additions, changes and/or replacements as necessary to provide a satisfactory dewatering system.
5. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation. Well or sump installations shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground.
6. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.
7. The Contractor shall take all additional precautions to prevent uplift during construction. The Contractor shall maintain the groundwater level below the pipe so flotation is prevented.
8. Drainage water shall be disposed of through a desilting basin which will prevent the discharge of sediment into any surface waters or existing drains, and to prevent flow or seepage back into the excavated area.
9. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.

10. Removal of dewatering equipment shall be required; the material and equipment constituting the system, shall be removed by the Contractor.
11. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

C. Culverts and Ditches

1. Protect drainage culverts from damage. If damaged, restore to satisfactory condition at no cost to the Owner.
2. If it is necessary to remove a culvert, do not replace until the proposed pipeline is installed and trench backfilled and compacted to the subgrade of the culvert. Replace culverts to the line and grade established by the Owner.
3. Backfill minor drainage ditches so that the upper one foot of material between ditch banks is topsoil, loam, or clay.
4. Compact this material for the full ditch width to a minimum of 95% of maximum density as determined by ASTM D 1557.
5. Ditches steeper than 2:1 slope shall be protected and reinforced with a synthetic fiber or grid material. Contractor has the option not to use reinforcement for slopes 2:1 or flatter. Correct any ditch erosion occurring as a result of pipeline construction at no cost to the Owner.

D. Water, Gas, Telephone, Power, Cable

1. Protect all other utilities from damage. Notify utility owner prior to start of excavation as directed in sub-paragraph 3-5-2 of the General Conditions. If, during the work the utility is damaged, notify the utility company and the Owner immediately. Do not attempt to repair or replace damaged utilities unless so directed by the utility company and approved by the Engineer. Payment for restoration of damaged utilities shall be the Contractor's responsibility. Call before you dig – Utilities Protection Center 1-800-282-7411.

1.06 JOB CONDITIONS

A. Soils

1. The contractor shall examine the site or undertake his own soil borings prior to submitting his bid, taking into consideration all conditions that may

affect his work. The Owner and Engineer will not assume responsibility for subsoil quality or conditions. The Contractor shall accept the site in its existing condition, and shall assume the risk of encountering whatever materials as may occur. The Contractor shall make his own determination of the soil structure and site conditions as it may affect the work.

B. Existing Utilities

1. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should uncharted, or incorrectly charted, piping appear in the excavation, consult the Engineer and the Owner of such piping or utility immediately for directions.
3. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
4. Demolish and completely remove from site existing underground utilities indicated on the Drawings to be removed.

C. Protection of Persons and Property

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

1.07 SUBMITTALS

- A. Submit to the Engineer for review in accordance with Section 01300 the proposed methods of construction, including dewatering, excavation, filling, compaction, and backfilling for the various portions of the work. Review shall be for method only. The Contractor shall remain responsible for the adequacy and safety of the methods.
- B. Submit to the Engineer for review in accordance with Section 01300 representative samples of each type of proposed fill material weighing approximately 50 lbs at least 15 days prior to the date of anticipated use of such material.

PART 2 – PRODUCTS

2.02 MATERIALS

- A. Backfill materials shall be natural or processed mineral soils, blasted and crushed rock, or masonry rubble. Fill materials shall be free of all organic material, trash, snow, ice, frozen soil or other objectionable materials. Clay soils having a natural in-place water content in excess of 30 percent are considered unsuitable for stockpiling and/or future use. Fill materials to be used have been classified under categories specified below.
- B. Embedment materials listed here include a number of processed materials plus the soil types defined by the USCS Soil Classification Systems in ASTM D2487. These materials are grouped into categories according to their suitability for this application:
1. Class I: Angular crushed stone or rock (1/4 to 1-1/2 inches), crushed gravel, crushed slag; large voids with little or no fines.
 2. Class II: Coarse sands and gravels with maximum particle size of 40 mm (1-1/2 inches), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
 3. Class III: Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM,GC, SM and SC are included in this class.
 4. Class IV: Silt, silty clays and clays including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, CH and CL are included in this class. These materials are not to be used for bedding, haunching or initial backfill.
 5. Class V: This class includes the organic soils OL, OH and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1-1/2 inches) in diameter, and other foreign materials. These materials shall not be used for bedding, haunching and initial backfill.
- C. Granular Fill, shall be sound, hard, durable crushed stone meeting the following gradation requirements and shall conform to ASTM C33, Size No. 57.

Sieve Size

Percent Passing by Weight

1-1/2-in	100
1-in	90-100
1/2-in	26-60
No. 4	0-7
No. 8	0-3

- D. Sand shall conform to ASTM Standard C33 for concrete sand.

PART 3 – EXECUTION

3.01 EXCAVATION

- A. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures in the trench zone may be determined before being damaged. He shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged because of his operations.
- B. The Contractor shall make explorations and excavations at no additional charge to the Owner to determine the location of existing underground structures.
- C. Utilities and other piping shall be laid in open trenches as shown and specified. Trenches shall be excavated to the designated lines and grades, beginning at the outlet end and progressing toward the upper end in each case. Trenches for pipe shall be shaped to the lower 1/3 of the pipe and provide uniform and continuous bearing. Bell holes shall be dug to allow ample room for working fully around each joint.
- D. Trenches shall be of minimum width to provide ample working space for making joints and shall be not less than 16 inches greater than the outer diameter of the pipe or more than 18 inches greater than the outer diameter of the pipe. Sides of trenches shall be closely vertical to top of pipe and shall be sheet piled and braced where soil is unstable nature. Above the top of the pipe, trenches may be sloped. The ridge of the trench above this level may be wider for sheeting and bracing and the performance of the work.
- E. Trenches shall be excavated on the alignments shown on the Plans, and to the depth and grade necessary to accommodate the pipes at the elevations shown. Where elevations of the invert or centerline of a pipe are shown at the ends of a pipe, the pipe shall be installed at a continuous grade between the two elevations.
- F. Excavation in excess of the depth required for proper shaping shall be corrected by bringing to grade the invert of the ditch with compacted coarse, granular material

at no additional expense to the Owner. Bell holes shall be excavated to relieve bell of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.

- G. Excavation in excess of the depths required for manholes and other structures shall be corrected by placing a subfoundation of 1500 psi concrete, at no additional expense of the Owner.
- H. If trenches are excavated to widths in excess of those specified, or if the trench walls collapse, the pipe shall be laid in accordance with the next better class of bedding at the expense of the Contractor.

3.02 TRENCHES

- A. Trenches shall be maintained in a safe condition to prevent hazardous conditions to persons working in or around the trench.
- B. Braced and sheeted trenches and open trenches shall comply with all State and Federal Laws and Regulations, and local ordinances relating to safety, life, health and property.
- C. The top portion of the trench may be excavated with sloping or vertical sides to any width which will not cause damage to adjoining structures, roadways, utilities, etc. The bottom of the trenches shall be graded to provide uniform bearing and support each section of the pipe on undisturbed soil every point along its entire length, except for the portions of the pipe sections excavated for bell holes and for the sealing of pipe joints. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and in order that the pipe rests upon the trench bottom for its full length and shall be only of such length, depth and width for making the particular type of joints. The bottom of the trench shall be rounded so that at least the bottom one-third of the pipe shall rest on undisturbed earth for the full length of the barrel as jointing operations will permit. This part of the excavation shall be done manually only a few feet in advance of the pipe laying by workmen skilled in this type of work.
- D. The sides of all trenches and excavation for structures shall be held by stay bracing, or by skeleton or solid sheeting and bracing according to conditions encountered, to protect the excavation, adjoining property and for the safety of personnel. Bracing and shoring may be removed then the level of the backfilling has reached the elevation to protect the pipe work an adjacent property. When sheeting or shoring above this level cannot be safely removed, it may be left in place. Timber left in place shall be cut off at least 2 feet below the surface.

3.03 PILING EXCAVATED MATERIALS

- A. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways.

3.04 LIMIT TO LENGTH OF OPEN TRENCH

- B. Pipe trenches shall not be excavated more than 400 feet in advance of pipe laying and all work shall be performed to cause the least possible inconvenience to the public. Adequate temporary bridges or crossings shall be constructed and maintained where required to permit uninterrupted vehicular and pedestrian traffic.

3.05 REMOVAL OF UNSUITABLE MATERIAL

- A. Should overdepth excavation be necessary to remove unsuitable material and to replace with satisfactory material, the Contractor will be paid a negotiated amount for this work based on the following requirements:
 1. When the trench is excavated to the plan depth or as required by these Specifications, and soft or other material not suitable for bedding purposes is encountered in the trench, the Contractor shall immediately notify the Engineer for inspection and measurement of the unsuitable material to be removed.
 2. No overdepth excavation or backfilling of the overdepth excavated trench shall start until proper measurements of the trench have been taken by the Engineer for the determination of the quantity in cubic yards of unsuitable material excavated. Backfill material and backfilling shall conform to the requirements specified in 3.08 below.
 3. No payment will be made for any overdepth excavation of soft unstable material due to the failure of the Contractor to provide adequate means to keep the trench dry.
 4. No payment will be made for any overdepth excavation of the unsuitable material and replacement not inspected and measured by the Engineer prior to excavation.

1.06 PIPE BEDDING

- A. **Bedding for all types of pipe shall be in accordance with the bedding detail provided in the Plans.**
- B. Bedding of Ductile Iron Pipe

1. Pipe shall be laid on foundations prepared in accordance with ANSI/AWWA C600 as modified herein, and in accordance with the various classes of bedding required by the trench width and trench depth for the size of pipe to be laid. Typical bedding shall be included in the appropriate unit price bid for ductile iron pipe.
- C. Bedding of PVC Pipe
1. Pipe shall be bedded true to line and grade with uniform and continuous support from a firm base in accordance with ASTM D2321 as modified herein.
- D. Bell Holes: Bell holes shall be provided in all classes of bedding to relieve pipe bells of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.
- E. Bedding material shall be placed on a flat bottom trench and thoroughly compacted by tamping or slicing with a flat blade shovel. Compacted bedding material shall be extended up the sides of the pipe to the heights shown in the bedding detail in the Plans.
- F. Overwidth Excavation: If trenches are excavated to widths in excess of those specified below, or if trench walls collapse, pipe shall be laid in accordance with the requirements for at least the next better class of bedding at the expense of the Contractor.
- G. Pipe shall be bedded true to line and grade with uniform and continuous support from a firm base in accordance with ASTM D2321 as modified herein. Blocking shall not be used to bring the pipe to grade. Typical bedding material shall be included in the unit price for plastic and FRP pipes.
- H. Compaction of foundation, bedding, haunching and initial backfill shall extend to the trench wall.
- I. Bedding material in the area around the pipe shall be installed with care. Care shall be used to insure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Precautions must be taken to prevent movement of the pipe during placing of the material through the pipe haunch. See bedding detail in plans for further detail.
- J. Avoid contact between the pipe and compaction equipment. Compaction of haunching, initial backfill and backfill material shall be done in such a way so that compaction equipment will not have a damaging effect on the pipe.

- K. The trench depth shall be as shown on the plans or as required to provide the depth of cover as specified by the purchaser.

3.08 BACKFILLING

- A. Backfilling consists of placing suitable materials removed during the excavation into the excavated areas, placing embedment materials and compacting the same to a density equal to or greater than what exists before excavation or as specified herein.
- B. Borrow Backfill: Borrow backfill will be required if there is not sufficient suitable material available from other parts of the work to backfill the trenches. Borrow backfill from approved borrow pits shall be used. Only those soils in the borrow pits that meet the specified requirements for suitable material shall be used.
- C. All backfill material shall be free of stones, concrete and clay lumps larger than 1/3 cubic foot. Roots, stumps and rubbish which will decompose will not be permitted in the backfill. Backfill material shall have its moisture content corrected, as may be necessary before being placed in the trench to bring the moisture content to approximately "optimum" for good compaction. Any rock, stone, concrete, clay lumps larger than 1/3 cubic foot in volume, rubbish and debris shall be removed from the site and disposed of by the Contractor in a lawful manner.
- D. The existing sanitary sewer pipe is 18" clay and shall be removed and disposed of properly or may be "demolished in place" by removing pipe pieces larger than 6" in diameter. For "demolish in place", clay pipe pieces smaller than 6" in diameter may be mixed in with specified backfill material. Existing pipe at creek crossing is ductile iron and shall be removed and disposed of by contractor. Existing manholes shall be removed and disposed of by contractor.
- E. Select Backfill: Select backfill material shall be placed below, around each side, and over the top of the pipe in approximately horizontal layers not exceeding 8-inches in thickness to a minimum height of 6-inches above the pipe crown or greater as detailed herein and on the Drawings. This initial backfill shall be placed immediately after the pipes are laid and joints have been observed by the Engineer to anchor and protect the pipe from damage by subsequent backfill and ensure the uniform distribution of the loads over the top of the pipe. Select Material shall be Class I. The Contractor shall backfill both sides of the pipe simultaneously to prevent side pressures and each layer shall be compacted thoroughly with mechanical tamping equipment in such manner as not to damage the pipe, pipe joints or shift the pipe alignment. Workmen shall not be permitted to walk over the pipe until at least 12 inches of compacted fill has been placed over the pipe. The Contractor shall not use water to obtain compaction except for adding water to

the backfill material before placing in the trench to bring the moisture content to approximately "optimum" for good compaction.

- F. General Backfilling: After initial, select backfill material has been placed and tamped, the remainder of the trench may be backfilled with general excavated material, except that no rock, unless in small shattered fragments, will be permitted to be mixed with other backfill material.
 - 1. Backfilling under buildings, and structures: Backfilling a pipe trench under structures and buildings consists of placing structural fill in the trench in 4 inch maximum loose lifts (if hand tamped) and 6" maximum loose lifts (if machine tamped) and compacting an area from the undercut level to the slab support level to 100% of the modified Proctor maximum dry density (ASTM D 1557). No water shall be used to secure compaction except for adding water to the backfill material before placing in the trench to bring moisture content approximately "optimum" for good compaction. Each loose lift shall be tamped before additional backfill material is placed in the excavated area.
 - 2. Street and Road Right – of – Way, Parking Areas, Yards and Other Traveled Areas: Backfill shall consist of placing structural fill in the trench in uniform layers not exceeding six inches (6") in thickness, with each layer thoroughly compacted to 95% of the modified Proctor maximum dry density (ASTM D 1557) with heavy duty mechanical tampers ("Whacker" or equal).
- G. In other areas, including woodlands, fields, pastures, areas not open to vehicular travel, and areas where no structures are proposed or anticipated in the future, the remainder of the ditch may be backfilled by placing fill in ditch and "walking-in" with wheel loaded equipment. Backfill material may be windrowed and maintained in a suitable manner so as to concentrate and pond rainfall runoff over the trench. After sufficient settlement has been obtained, the Contractor shall complete surface dressing, remove surplus material and clean up in accordance with these Specifications. Wherever trenches have not been properly filled, or if settlement occurs, they shall be refilled, smoothed off and finally made to conform to the surface of the ground. Backfilling shall be carefully performed and the original surface restored as specified herein. Compaction in these areas shall not be less than 90% of the modified Proctor maximum dry density. Surplus material shall be disposed of by the Contractor.

3.09 PROTECTION OF WATER SUPPLY PIPES

- A. Horizontal Separation: Sewers and force mains shall be laid at least 10 feet horizontally from any existing or proposed watermain. The distance shall be

measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, such deviation may allow installation of the sewer or force main closer to the watermain, provided that the watermain is in a separate trench or on a undisturbed earth shelf located on the side of the sewer or force main and at an elevation so the bottom of the watermain is at least 18 inches above the top of the sewer or force main.

- B. Crossings: Sewers and force mains crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the watermain and the outside of the sewer or force main. This shall be the case where the watermain is either above or below the sewer or force main. The crossing shall be arranged so that the sewer or force main joints will be equidistant and as far as possible from the watermain joints. Where a watermain crosses under a sewer or force main, adequate structural support shall be provided for the sewer or force main to prevent damage to the watermain.
- C. Special Conditions: When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer or force main shall be designed and constructed equal to water pipe, and shall be pressure tested to assure water tightness prior to backfilling.

3.10 UTILITY CONSTRUCTION IN OTHER EXCAVATION

- A. Where utilities are required to be constructed in areas also requiring excavation and backfill for other work, coordinate the work so that the parts come together properly and the construction of the various parts can be done without damage to other parts. Place bedding which will form bearing for pipes, using suitable material and shaping to the lower 1/3 of the pipe to provide uniform and continuous bearing. Compaction of backfill material which will form bearing shall be equal to that specified hereinbefore under "Backfilling under buildings and structures". After the pipe or other utility is placed, backfilling shall proceed as specified hereinbefore following the requirements specified under Section 3.08 as applicable.

END OF SECTION

CONSTRUCTION NOTES:

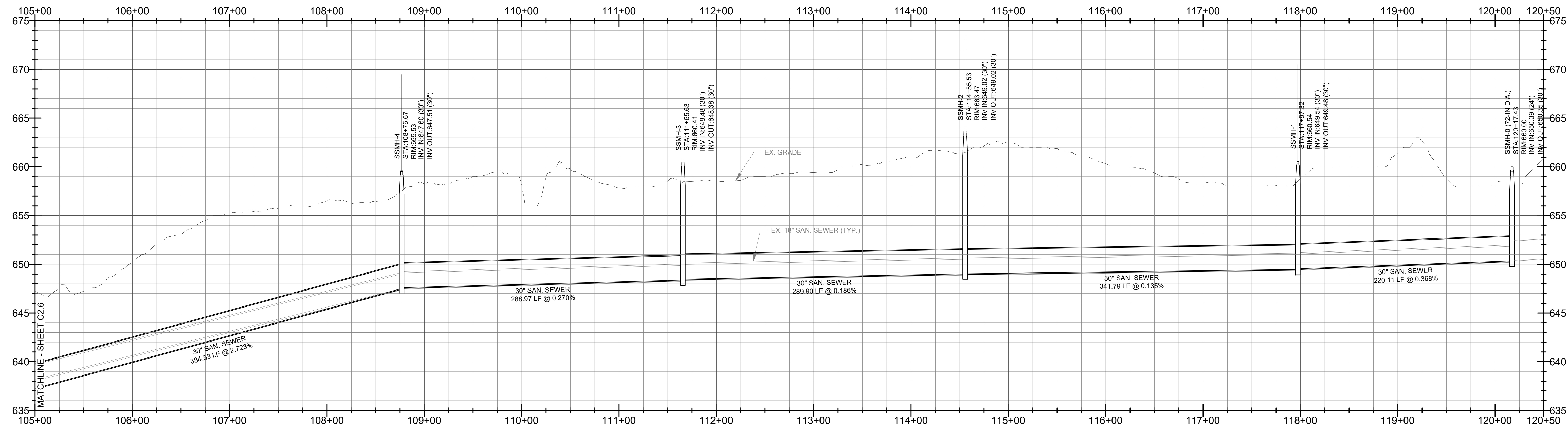
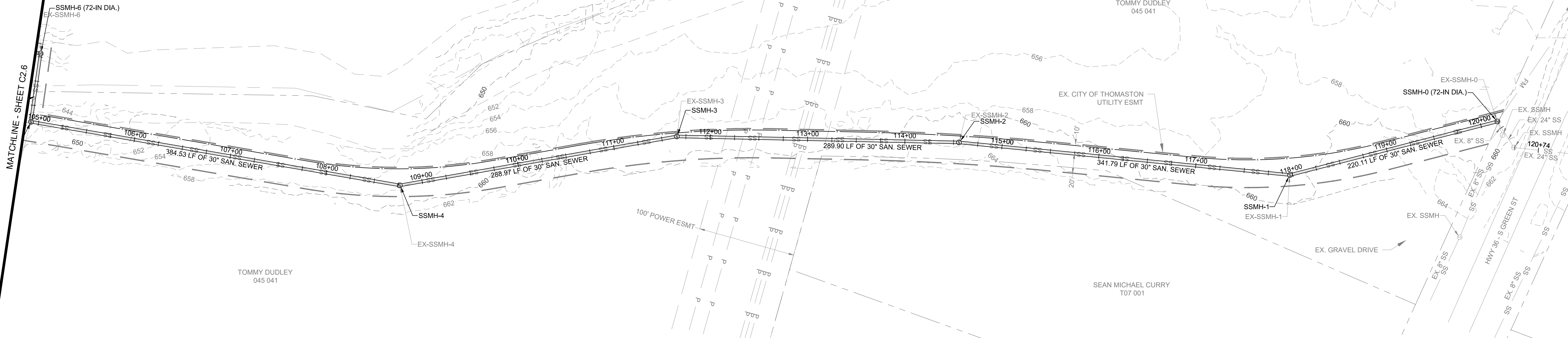
- FOR PROPOSED PIPE MATERIAL, SEE DETAILS SHEET C4.0.
- LOCATION OF ALL EXISTING UTILITIES IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY.
- CONTRACTOR SHALL RECONNECT ALL DISTURBED SEWER SERVICE LATERALS TO THE PROPOSED MAIN. SEE DETAILS SHEET C4.0.
- CONTRACTOR SHALL RELOCATE EX. POWER POLES AS NECESSARY. RELOCATED POWER POLES SHALL NOT IMPEDE THE ACCESS ROAD. CONTRACTOR SHALL COORDINATE WITH OWNER PRIOR TO DISTURBANCE.
- ALL MANHOLES TO BE 60" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- EXISTING PIPE IS 18" CLAY AND SHALL BE REMOVED AND DISPOSED OF PROPERLY OR MAY BE "DEMOLISHED IN PLACE" BY REMOVING PIPE PIECES LARGER THAN 6" IN DIAMETER. FOR "DEMOLISH IN PLACE", CLAY PIPE PIECES SMALLER THAN 6" IN DIAMETER MAY BE MIXED IN WITH SPECIFIED BACKFILL MATERIAL. EXISTING PIPE AT CREEK CROSSING IS DUCTILE IRON AND SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. EXISTING MANHOLES SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR.
- CONTRACTOR SHALL PROVIDE BYPASS PUMPING AND ENSURE CONTINUED, UNINTERRUPTED SEWER SERVICE THROUGHOUT CONSTRUCTION.



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TOMMY DUDLEY
045 041

SEAN MICHAEL CURRY
T07 001



STA. 105+00 - STA. 120+50



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**USDA SEWER SYSTEM
IMPROVEMENTS - CONTRACT B -
TOWN BRANCH INTERCEPTOR**

FOR THE
CITY OF THOMASTON

NO.	REVISIONS	DATE
1	ADDENDUM #1	12/31/2020

BID SET



DRAWN BY: ADS
CHECKED BY: ABG
DATE: DEC 2020
SCALE: H: 1" = 50'
V: 1" = 5'

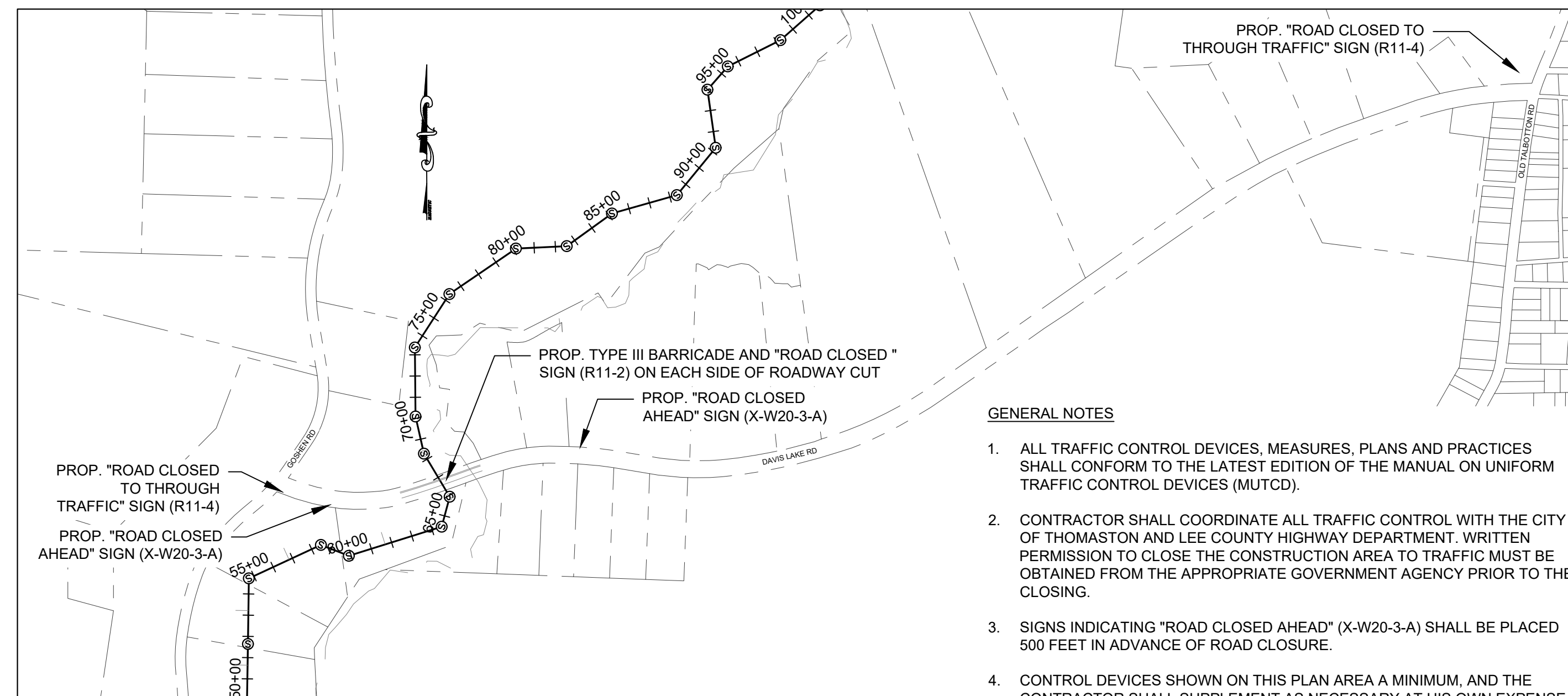
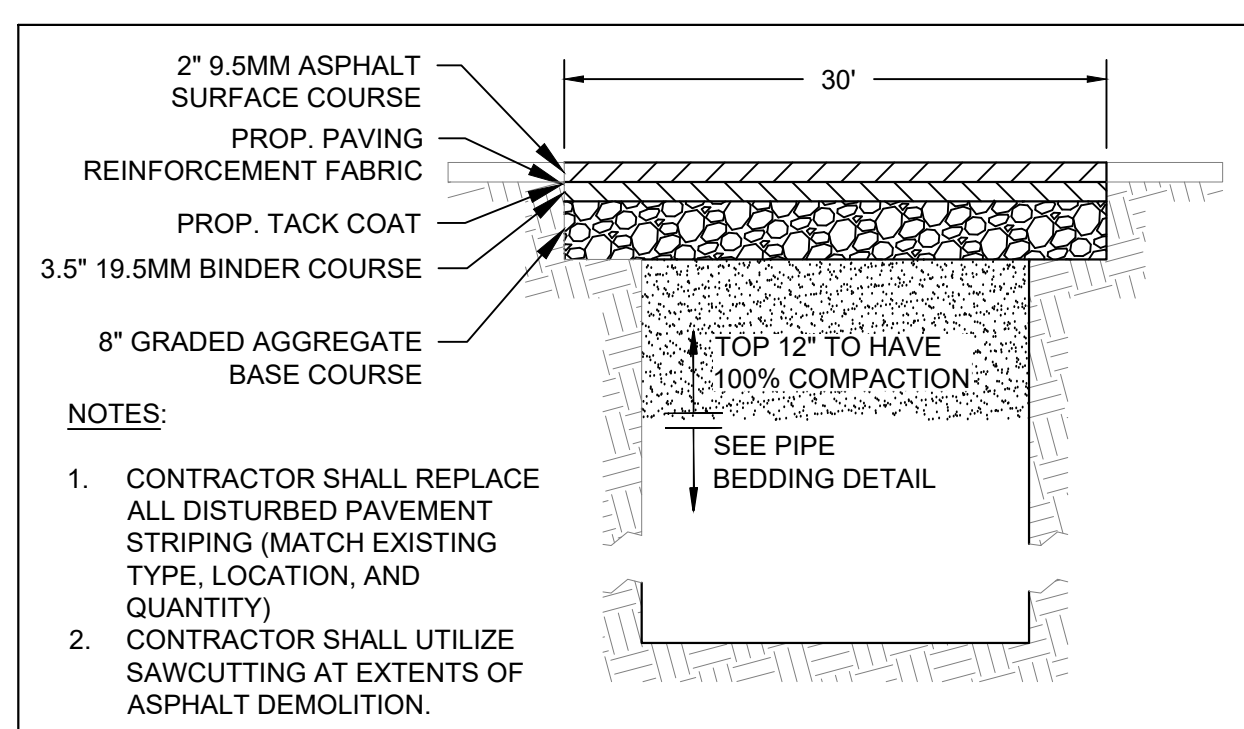
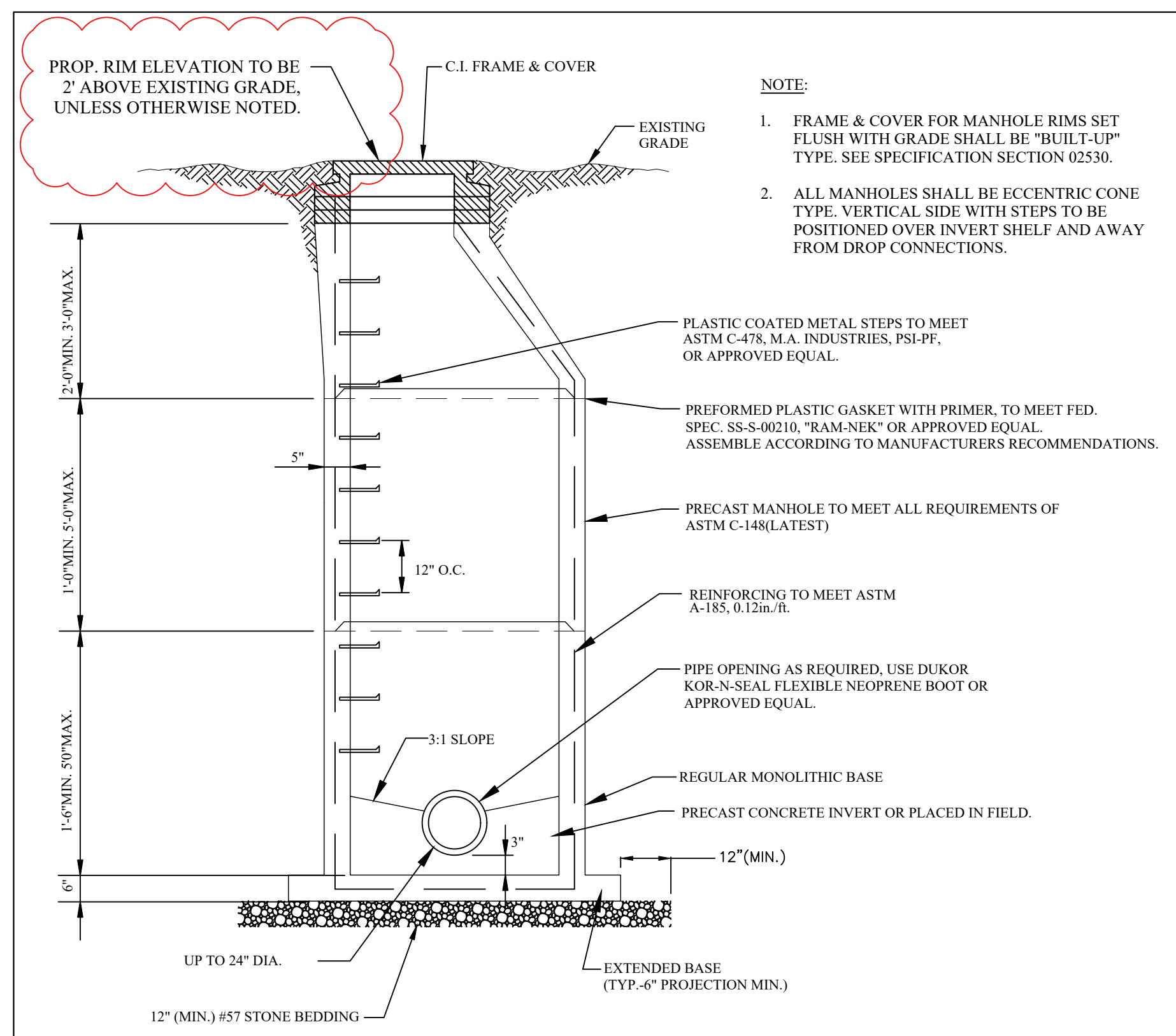
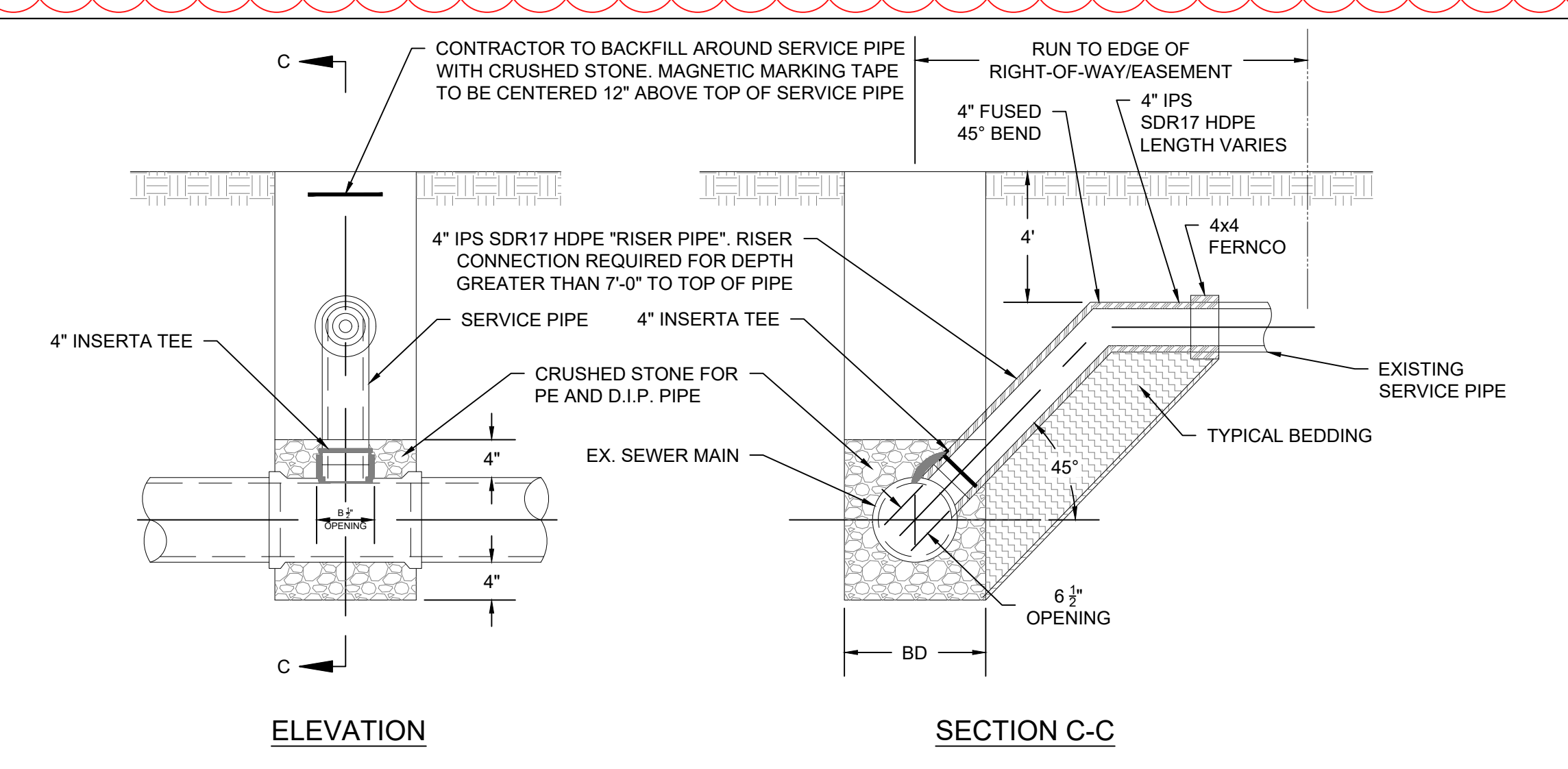
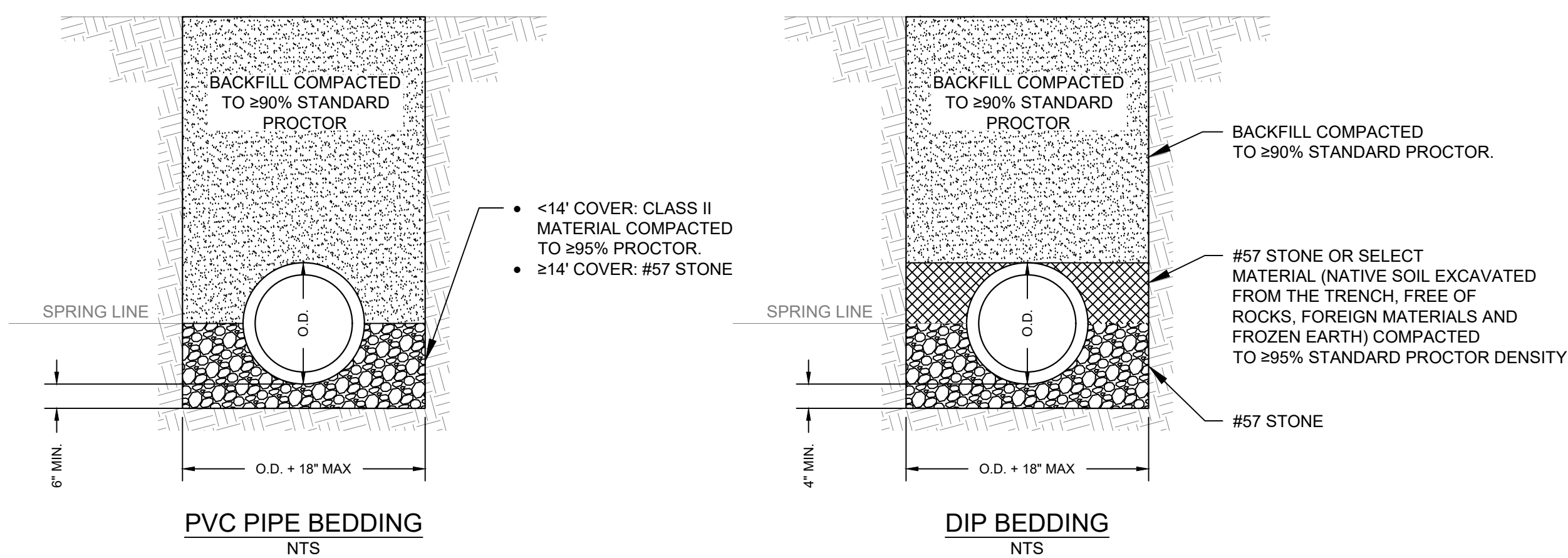
CONTENT:
**SANITARY SEWER
PLAN & PROFILE:
STA. 105+00 - 120+50**

SHEET NO:
C2.7

Last Saved By: Andrew Swiscood. Plotted: 12/31/2020 1:45 PM
Drawing Path: Z:\Engineer Projects\13000 - THOMASTON, CITY OF\13000.117 Town Branch SS Study\CAD\Bases\VC-BASE.dwg

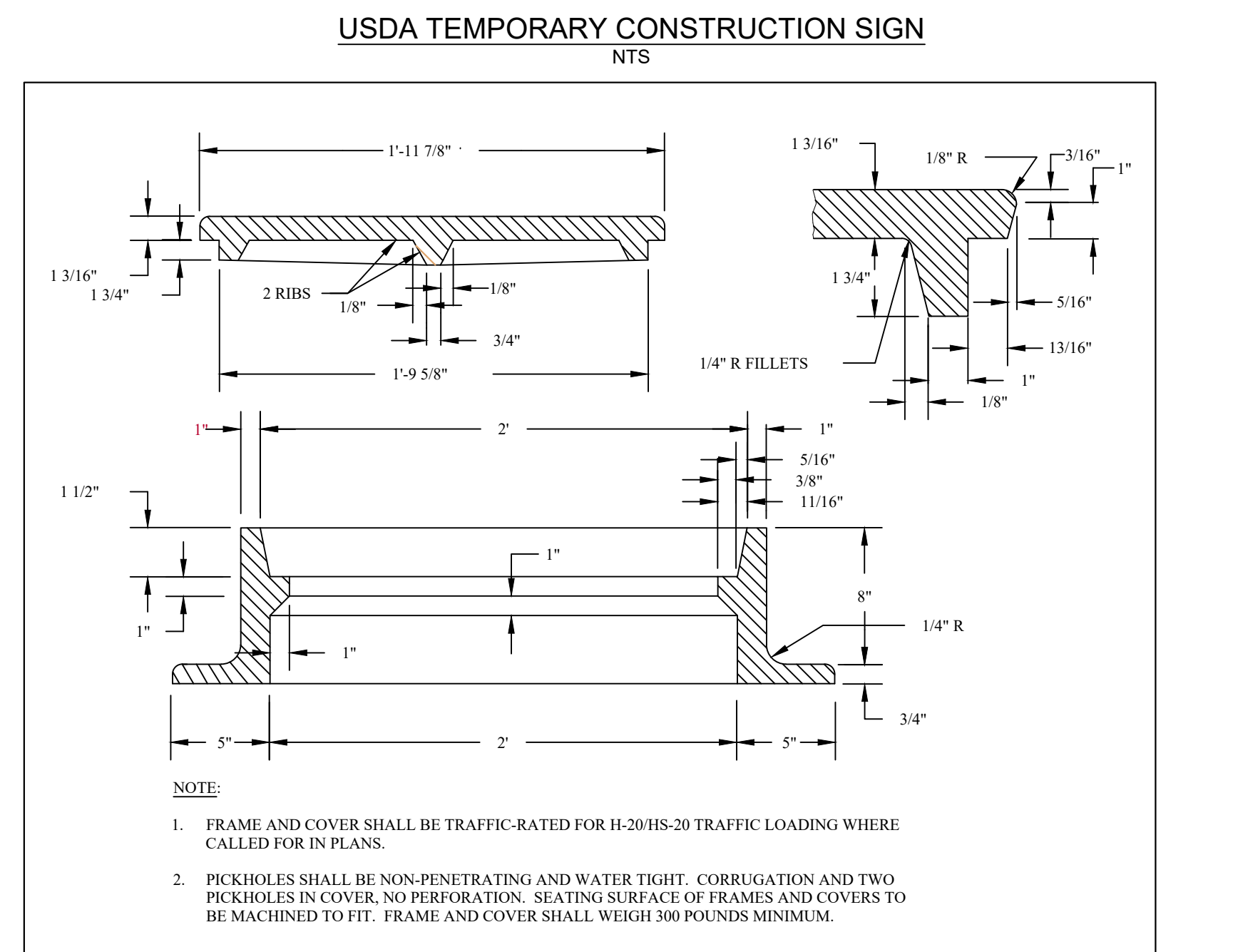
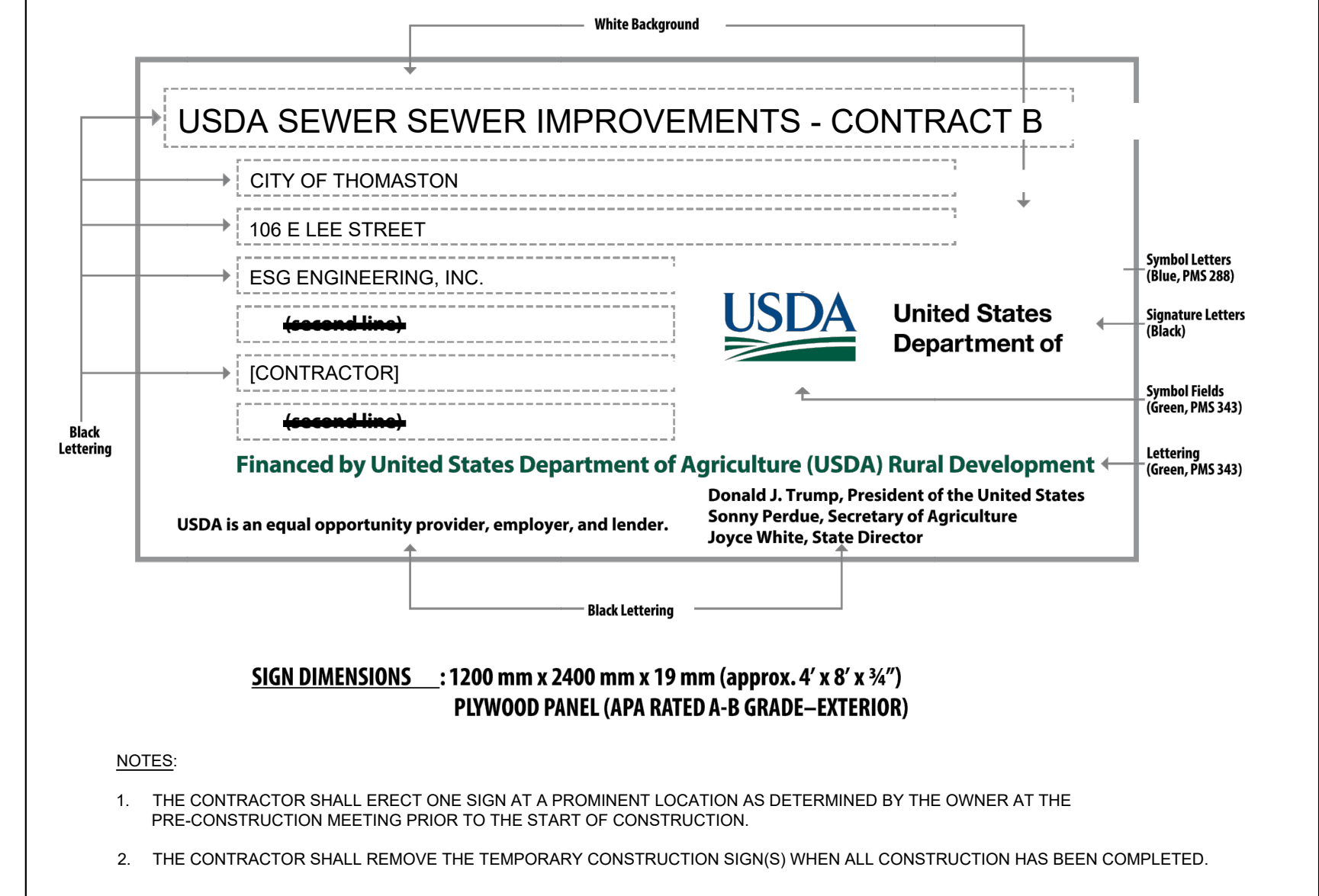
PIPE MATERIAL BIDDING NOTES:

1. PROPOSED PIPE MATERIAL SHALL BE EITHER PVC OR DUCTILE IRON (BIDDER'S CHOICE) EXCEPT WHERE SPECIFICALLY NOTED ON PLANS. PIPE MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF SPECIFICATION SECTION 02530.
2. THE INCLUDED UNIT AMOUNT IN THE BID ITEM FOR "SANITARY SEWER MAIN COMPLETE" AT A GIVEN DEPTH SHALL INCLUDE ALL BEDDING, BACKFILL, MATERIAL, LABOR, TOOLS, AND TESTING REQUIRED.
3. THE ALTERNATE BID FOR 24" PIPE MAY INCLUDE QUANTITIES OF PIPE AND MATERIALS WHICH VARY FROM THE BASE BID FOR 30" PIPE.



TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS

Recommended Fonts: Helvetica, Arial, or Myriad Pro



NO.	REVISIONS	DESCRIPTION	DATE
1	ADDENDUM #1		12/31/2020

BID SET



DRAWN BY: ADG
CHECKED BY: ABG
DATE: DEC 2020
SCALE: NTS

CONTENT: DETAILS

SHEET NO:

C4.0